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Title: BIOCATALYST AND ITS PRODUCTION

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Abstract:

PURPOSE: To obtain a spherical biocatalyst high in mechanical strength and secured in stability, by including an enzymatically active substance, cationic polyelectrolyte, polyvalent anion and silicic acid.

CONSTITUTION: First, a suspension A is prepared by mixing an enzymatically active substance such as cells belonging to *Proteus vulgaris* sp. and/or *Proteus mirabilis* sp., 2-15 wt.% of precipitated silicic acid 5-50 μm in average particle size and -100 g/100 mL in average bulk density, an aqueous buffer solution, and 0.3-1.5 wt.% of a cationic polyelectrolyte such as chitosan 50,000-3,000,000 in molecular weight together through avoiding bubble formation. Secondly, the suspension A is dripped into about three volume times of a crosslinking agent bath B containing 0.5-10 w/v% of a tripolyphosphate such as a polyvalent anion to effect formation of biocatalyst beads. Finally, the beads are contracted and solidified and, as necessary, separated from the B-component, thus obtaining the objective spherical biocatalyst high in mechanical strength and capable of transforming e.g. an α -ketocarboxylic acid into the corresponding α -hydroxycarboxylic acid.

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NOTE: This Registered Patent Specification (Toroku) results from Published Japanese Application (Kokai) 02-190187 A2.